



TESTIMONY OF GOVERNOR LINDA LINGLE

Before the

HOUSE COMMITTEE ON EDUCATION AND COMMITTEE ON HIGHER EDUCATION

Wednesday, January 31, 2007

HB 1268 RELATING TO INNOVATION IN EDUCATION

Chair Takumi, Vice Chair Berg, and Members of the House Committee on Education, Chair Chang, Vice Chair Bertram, and Members of the House Committee on Higher Education:

I am very pleased to appear before you this afternoon to urge your support for the measures that are included in HB 1268. This is an Administration measure proposing seven programs that strengthen the educational system's ability to produce high school graduates with stronger STEM skills. These skills can lead to careers in STEM fields or allow our youth to succeed in the whole range of industries that increasingly rely on technology to improve productivity and remain globally competitive.

In my State of the State address earlier this month, I talked about the vision of a brighter future for Hawaii's citizens – one that allows us to compete globally and prosper at home. But this future depends on changing our economy from one based on land development to one fueled by innovation driven by new ideas generated in our universities and supported by a highly trained workforce.

There are many things we will need to do to accomplish this transformation. The Administration has put together a package of bills that we have submitted for your consideration that will allow us to move forward. In addition to HB 1268, the package includes HB 1279 relating to Innovation in the Economy, HB 1280 on Innovation in the Workforce, and HB 1281 which deals with Hawai'i's connections to innovation centers globally.

I think we have all heard stories about the difficulty that many of Hawaii's high-tech firms are having in filling highly skilled positions. Indeed, with the lowest unemployment rate in the nation, we face this challenge in all our industries. Many firms have to recruit from the Mainland and abroad to fill positions that require advanced training. While we must address the existing need for employees, we are also committed to growing the types of industries that create new, high-wage jobs and support Hawaii's global competitiveness. But to do this we must find ways to produce a workforce that is more skilled and competitive in science and technology.

The proposals included in HB 1268 address this need with programs designed to strengthen our STEM capacity in several stages of the education-to-work pipeline: These include:

- **The Hawaii Excellence in Science & Technology (HiEST) Academy Program**, which would be coordinated by the community colleges to combine experiential project-based learning with a standards-based, applied science, and math curriculum for volunteer high schools. The HiEST academies' curriculum would be designed to provide high school and community college credit. We envision a pilot program that involves 14 high schools: two each on Kauai, the Big Island, and in Maui County, and eight throughout Oahu. Each of the seven community colleges would work with schools in their districts to find volunteer schools to host the program.

We have discussed with the Department of Education modeling this concept on the construction and CISCO academies that have proven very successful in other specialty areas. We believe that model can be used successfully to enhance STEM education in Hawaii.

- The second proposal in this bill is the **The Fostering Inspiration and Relevance through Science & Technology (FIRST) Pre-academy Program**. This is envisioned as a way to bring structure and resources to programs that spark interest in children by involving them in solving real-world problems, combining academic learning, and hands-on experience. As you know, I recently participated in the annual kick-off for an extra-curricular robotics program for youth that teaches STEM skills, known as the FIRST Robotics Competition. I spent three days in New Hampshire as the guest of FIRST founder and one of America's most imaginative and best known inventors, Dean Kamen, who last year was inducted into the National Inventors Hall of Fame.

Hawaii already has four FIRST Robotics teams at Waiakea, Punahou, McKinley, and Waialua High Schools. During my visit to New Hampshire, NASA committed \$1 million over the next three years to fund up to 20 Hawaii robotics teams, as well as a regional competition next March here in Honolulu. One of the goals of the Hawaii FIRST Academies proposed in this bill is to support and expand the State's existing robotics programs by providing a coordinator and additional resources so that teachers and mentors can focus on working with the students.

The overall concept of the proposed FIRST Academy Program is to provide the motivation for students to choose a path leading to enrollment in a HiEST Academy and to continue their STEM education into post-secondary institutions. But regardless of each child's educational goals, the STEM skills developed through contextual learning programs will be valuable in whatever career a student chooses.

- The third proposal is The Professional Development in STEM Program. This effort would provide opportunities for more practicing elementary, middle, and high school teachers to improve their understanding of current STEM content and teaching methods. Because we understand that teachers' schedules are no longer as flexible as they once were, this proposal would have the College of Education at the University of Hawaii develop a variety of programs that would meet the needs of a greater number of teachers who want to earn Professional Development credit and improve their ability to bring information on the latest scientific developments to their students.
- Our fourth proposal is directed at **attracting STEM graduates to the teaching profession**. This is one important way to help meet the demand for science and math teachers in our schools. It is critical, particularly at the more advanced grades, for teachers to be both good teachers and well-trained in the subject that they are teaching. The University of Hawaii's Post Baccalaureate Certificate in Secondary Education provides the opportunity for people who have just graduated, or are considering a mid-career change, to enter the teaching profession. The proposal in HB 1268 requests funds to continue a successful program that was initiated under a federal grant that provided modest stipends as an incentive to attract graduates with STEM degrees to this program. The federal grant is due to run out and cannot be renewed for STEM fields. Because this is such an important field and one in which we have such a need, we believe that this investment merits your approval.
- Another important proposal is an **Internship/Mentorship Program**. This effort would address another critical element of the STEM education pipeline. That element is to make it easier for businesses to develop internship programs to provide students with real-world experiences. The effort also provides businesses with the opportunity to nurture relationships with possible future employees. Although many businesses are willing, they do not all understand the process or how to maximize the benefits to both the host company and the student. This proposal would involve a partnership with industry to expand on and learn from existing programs, focusing initially on the students in the HiEST Academy Program.
- We are also proposing **Scholarships for graduates of the HiEST Academies** who pursue STEM post-secondary training or college degrees in Hawaii. This provides students and their parents with a powerful incentive to stay in the program. This is the final step of the STEM pipeline, which will demonstrate the State's commitment to developing a STEM-literate population.

We believe that this approach can work because it involves a commitment from both the students and the State. Students on the one hand, along with their parents or guardian, sign a pledge to meet certain standards and expectations. The State then promises to help these families gain an education for their children.

We recognize that this has the potential to be the most expensive proposal we are putting before you as part of the Innovation Initiative, even though no funds are requested in this biennium. Frankly, we hope that it is, because it will mean that we have been successful in filling the STEM education pipeline and that we are on the way to fulfilling the vision of a workforce that meets the needs of Hawaii in the global economy of the 21st century.

We urge you to establish the special fund now so that the High Technology Development Corporation can begin the process of developing administrative rules and a financial plan so that we are ready when the first HiEST graduates want to continue their STEM education in Hawaii. I believe this is an investment we should be willing and eager to make for Hawaii's future.

- Finally, **The Endowed STEM Chair Program** would establish a special fund, with appropriations from the Legislature and with private donations, to establish endowed faculty chairs in STEM disciplines. The revenues generated by the fund would be used to enhance salaries and provide other support to attract high profile faculty to Hawaii's research universities. This method is used across the country to raise the prestige of an institution, build synergy that will attract other eminent scholars, increase funding for research programs, and, most importantly, produce new discoveries that can generate income and public benefit through commercialization.

Many states have made the decision to invest heavily in this approach. We believe that this proposal represents a modest first step to ensure that this model, which only expends State funds when matching private funds are available, will prove successful for Hawaii. We have a world-class faculty in Hawaii now. With this measure we can expand that number and enhance Hawaii's role and reputation as a leader in several key fields.

In conclusion, I would like to reiterate a sentiment I voiced in my State of the State message. We need a shared vision of the future in order to stay on the pathway that will take us there. I believe that this vision is of a Hawaii in which prosperity will be created more through the power of innovation and new ideas and less through the development of land and overuse of our natural resources. And most important, it is a Hawaii that will still be the Hawaii that we all love; a place of unsurpassed natural beauty that cares for those in need; a place that honors its rich, multi-cultural heritage; and a way of life that is unique in all the world.

I believe that the proposals that are before you in HB 1268, along with the proposals in the related bills of the Innovation Initiative, represent a beginning, and that we can work together to explore their possibilities, incorporate new ideas, and develop concrete programs that will serve the people of Hawaii well.